

Vita

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Academic Degrees:

Ph.D. 1974 University of Munster
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Professional Experience:

1971-81 Assistant Professor, University of Munster
1976-77 Assistant Professor, Institute for Advanced Study
1980-81 Visiting Assistant Professor, University of Virginia
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1982-85 Assistant Professor, University of Georgia
1985-88 Associate Professor, University of Georgia
1988-00 Professor, University of Kansas
2001- Honorarprofessor, TU-München
2004-06 Lehrstuhlvertretung, University of Augsburg
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Publications:

1. Zur Konstruktion homogener Kegel, Math. Ann., Vol. 216 (1975), 79-96.
2. Relative Invarianten und nicht-assoziative Algebren (with M. Koecher), Math. Ann., Vol. 228 (1977), 147-186.
3. Theta functions for the special, formally real Jordan algebras, Inventiones Math., Vol. 44 (1978), 103-108.
4. Inductive construction of homogeneous cones, Trans. Amer. Math. Soc., Vol. 252 (1979), 321-349.
5. Algebraic description of homogeneous cones, Trans. Amer. Math. Soc., Vol. 255 (1979), 61-89.
6. Quasi-clans, Abh. Math. Sem. Hamburg, 50 (1980), 178-187.
7. Reguläre Kegel (with M. Koecher), Jber. Deutsch. Math.-Verein., Vol. 81 (1979), 109-151.
8. Peirce-Zerlegungen and Jordan-Strukturen zu homogenen Kegeln, Math. Z., Vol. 169 (1979), 179-194.
9. Homogenous Siegel domains, Nagoya Math. J., Vol. 86 (1982), 39-83.

10. Classification of certain pairs of operators (P, Q) satisfying $[P, Q] = i \text{ Id}$ (with G. Dorfmeister), *J. Funct. Anal.*, 57 (1984), 301-328.
11. Quasisymmetric Siegel domains and the automorphisms of homogeneous Siegel domains, *Amer. J. Math.*, Vol. 102 (1980), 537-563.
12. Umkehrbare and nilpotente Polynome eines Banachraumes (with J. Heinze), *Abh. Math. Sem. Hamburg*, 53 (1983), 170-190.
13. An algebraic approach to isoparametric hypersurfaces in spheres I, (with E. Neher), *Tohoku Math. J.*, 35 (1983), 187-224.
14. An algebraic approach to isoparametric hypersurfaces in spheres II, (with E. Neher), *Tohoku Math. J.*, 35 (1983), 225-247.
15. Isoparametric triple systems of algebra type, (with E. Neher), *Osaka J. Math.*, 20 (1983), 145-175.
16. Isoparametric triple systems of FKM-type I, (with E. Neher), *Abh. Math. Sem. Hamburg*, 53 (1983), 191-216.
17. Isoparametric triple systems of FKM-type II, (with E. Neher), *manuscripta math.*, 43 (1983), 13-44.
18. Isoparametric triple systems of FRM-type III, (with E. Neher), *Algebras, Groups, and Geometries*, 1 (1984), 305-343.
19. The isotropy representation for homogeneous Siegel domains (with J. D'Atri and Zhao Yan da), *Pacific J. Math.*, 120 (1985), 295-326.
20. Simply transitive groups and Kahler structures on homogeneous Siegel domains, *Trans. Amer. Math. Soc.*, 288 (1985), 293-305.
21. Homogeneous Kahler manifolds admitting a transitive solvable group of automorphisms, *Ann. Scient. 'Ec. Norm. Sup.'*, 18 (1985), 143-180.
22. Isoparametric hypersurfaces, case $g = 6, m = 1$, (with E. Neher) *Comm. algebra*, 13 (1985), 2299-2368.
23. The Radical Conjecture for homogeneous Kahler manifolds, in "Lie Algebras and Related Topics", *Proc. Canadian Math. Soc.*, Vol. 5, 1986.
24. Varietes homogenes kahleriennes, *C.R. Acad. Sc. Paris*, 301 (1985), 97-98.
25. Proof of the Radical Conjecture for homogeneous Kahler manifolds, *Nagoya Math. J.*, 114 (1989) 77-122.
26. La Conjecture Fondamentale pour les varietes homogenes kahleriennes (with K. Nakajima), *C.R. Acad. Sc. Paris* 303 (1986), 335-338.
27. The Fundamental Conjecture for homogeneous Kahler manifolds (with K. Nakajima), *Acta Math.* 161 (1988) 23-70.
28. Automorphisms for Banach manifolds associated with the KP-equation (with E. Neher, J. Szmigielski), *Oxford Quart. J.*, 40 (1989) 161-195.

29. Flat totally geodesic submanifolds of quasi-symmetric Siegel domains (with J. D'Atri), *Geometriae Dedicata*, 28 (1988) 321-336.
30. The biholomorphic curvature of quasisymmetric Siegel domains (with J. D'Atri), *J. of Diff. Geometry*, 31 (1990) 73-99.
31. Isoparametric triple systems with special Z-structure (with E. Neher), *Algebras, Groups and Geometries* 7 (1990) 21-94.
32. Special algebraic properties of Kahler algebras, *Tsukuba J. Math.* 14 (1990) 315-326.
33. Banach manifolds and their automorphisms associated with groups of type C and D (with E. Neher and J. Szmigielski), *Contemporary Mathematics*, Vol. 110 (1990) 43-65.
34. Principal Fiber Bundle Interpretation of the KP-Hierarchy (with J. Szmigielski), *Publ. RIMS* 28 (1992) 503-533.
35. Automorphisms of the KdV-Subvariety (with E. Neher and J. Szmigielski), *Integral Equations and Operator Theory* 14 (1991) 192-212.
36. Pseudo-Kahlerian Homogeneous Spaces Admitting a Reductive Transitive Group of Automorphisms (with Z.-D. Guan), *Math. Z.* 209 (1992) 89-100.
37. Fine Structure of Reductive Pseudo-Kahlerian Spaces (with Z.-D. Guan), *Geometriae Dedicata* 39 (1991) 321-338.
38. Classification of Compact Homogeneous Pseudo-Kahler Manifolds (with Z.-D. Guan), *Comment. Math. Helvetici* 67 (1992) 499-513.
39. Banach Manifolds of Constant Mean Curvature Surfaces, Conference Proceedings, *Geometry and Topology of Submanifolds*, III, p. 153-162, World Scientific (1991).
40. Constant Mean Curvature Surfaces and Loop Groups (with H. Wu), *J. fur reine und angew. Math.* 440 (1993) 43-76.
41. Banach Manifolds of Solutions to Nonlinear Partial Differential Equations, and Relations with Finite Dimensional Manifolds, *Differential Geometry*, R. E. Greene, S. -T. Yau editors, *Proc. Symp. Pure Math.* Vol 54(1), 121-139, AMS 1993.
42. Weighted l1-Grassmannians and Banach Manifolds of Solutions to the KP-Equation and the KdV-Equation, *Math. N.* 180, (1996), 43 - 73
43. Groups associated with a Grassmannian modelled on the Wiener Algebra, *Integral Equations and Operator Theory* 17 (1993) 464-500.
44. Riemann-Hilbert Factorization and Inverse Scattering for the AKNS-Equation with L1-Potentials I (with J. Szmigielski), *Publ. RIMS* 29 (1993) 911-958.
45. Supplement to "Fine structures of reductive pseudo-Kahlerianspaces", *Geometriae Dedicata* 42 (1992) 241-242.

46. Soliton Equations and Differential Geometry, Conference Proceedings, Differential Geometry, Scientific Bulletin Polytechnica University of Bucharest 55 (1993) 105-145.
47. Algebraic Systems in Differential Geometry, Conference Proceedings Oberwolfach 1992, Jordan Algebras, 9-33, Editors: W. Kaup, K. McGrimmon, H. Petersson, Walter de Gruyter 1994.
48. Weierstrass type representation of harmonic maps into symmetric spaces (with F. Pedit and H. Wu), Comm. Anal. Geom., 6 (1998) 633-668
49. Homogeneous Kahler and Pseudo-Kahler Manifolds, Conference Proceedings, Differential Geometry, Scientific Bulletin Polytechnica University of Bucharest 55 (1993) 89-103.
50. Systems of PDEs obtained from factorization in loop groups (with H. Gradl and J. Szmigielski) Acta Appl. Math. 53, (1998), 1-58
51. On the Meromorphic Potential for a Harmonic Surface in a k-Symmetric Space (with I. McIntosh, F. Pedit and H. Wu) Manuscripta Math. 92, (1997), 143-152
52. Meromorphic Potentials and Smooth CMC Surfaces (with G. Haak), Math Z., 224 (1997) 603-640.
53. Symmetric Cones, Topics in Geometry, S. Gindikin (ed.) Birkhauser 1996, 101-123.
54. Constant Mean Curvature Surfaces, Harmonic Maps, and Loop Groups, Proceedings of "Geometry Colloquium 1995", Munich.
55. On symmetries of constant mean curvature surfaces, Part I: General Theory (with G. Haak) Tohoku Math J. 50, (1998), 437 - 454
56. On symmetries of constant mean curvature surfaces, Part II: Symmetries in a Weierstrass-type representation, Int. J Math., Game Th. and Algebra 10,(2000), 121 - 146
57. On constant mean curvature surfaces with periodic metric (with G. Haak), Pacific J. Math. 182, (1998), 229 - 287
58. Investigation and application of the dressing action on surfaces of constant mean curvature (with G. Haak), Quart. J.Math.,51 (2000), 57 -73
59. Minimal surfaces via loop groups (with F. Pedit and M. Toda), Balkan J. Geom. Appl.,2 ,(1997) , 25-40
60. Construction of non-simply connected CMC surfaces via dressing (with G. Haak), J.Math.Soc.Japan, 55 , (2003) 335 - 364
61. Weierstrass-type representation of affine spheres (with U.Eitner), Abh. Math. Sem. Univ. Hamburg 71(2001), 225-250
62. Birkhoff decomposition and Iwasawa decomposition for general untwisted loop groups (with V. Balan), Tohoku Math.J.53 (2001), 593-615

63. A Weierstrass-type representation for harmonic maps from Riemann surfaces to general Lie groups, (with V. Balan), Balkan J. Geom. Appl. 5 (2000), no. 1, 7–37
64. Finite Type Lorentz Harmonic Maps and the Method of Symes, (with I.Sterling), Differential Geom.Appl. 17 (2002), 43-53
65. Weierstraß-type representation of timelike surfaces with constant mean curvature (with J.-I. Inoguchi and M.Toda), in Differential Geometry and Integrable Systems, Contemporary Mathematics 308 (2002), 77-99
66. Generalized Weierstraß Representations of Surfaces, Surveys on Geometry and Integrable Systems, Advanced Studies in Pure Mathematics 51 (2008), 55-111
67. Pluriharmonic maps, loop groups and twistor theory, (with. J.Eschenburg), Ann.Global.Anal.G geom. 24 (2003), 301-321
68. Konstruktion von Trinoiden und anderen Flächen konstanter mittlerer Krümmung, 27. Kolloquium über Differentialgeometrie, Würzburg, 2002
69. Dressing preserving the fundamental group (with M.Kilian), Differential Geom.Appl.23 (2005), 176-204
70. Weierstraß- type representation for harmonic maps into general symmetric spaces via loop groups (with V. Balan), J.Math.Soc.Japan 57 (2005), 69-94
71. Harmonic maps into general symmetric spaces via loop groups (with V. Balan), Conference Proceedings: Recent Advances in Geometry and Topology, Cluj-Napoca 2004, 49 - 64
72. Coarse classification of CMC-cylinders (with S. Kobayashi), Trans.Amer.Math.Soc. 359 (2007), 2483 - 2500
73. Konstruktion von Flächen aus automorphen Formen, Festschrift zum siebzigsten Geburtstag von Prof.Dr.A.Leutbecher 2004
74. Unitarization of Loop Group Representations of Fundamental Groups (with H.Wu), Nagoya Math. J. 187 (2007), 1-33
75. Construction of Constant Mean Curvature n-Noids from Holomorphic Potentials, (with H.Wu), Math.Z. 258 (2008), 773-803
76. Construction of planar CMC 4-noids of genus g=0 (with M.Schuster), JP Jour. Geometry and Topology 6 (2006), 319-381
77. Generalized DPW method and an application to isometric immersions of space forms, (with D.Brander), Math.Z. 262 (2009), 143 - 172
78. Rotational Hypersurfaces of periodic mean curvature, (with K.Kenmotsu), Differential Geometry and its Applications 27 (2009), 702-712
79. On a Theorem by Hsiang and Yu, (with K.Kenmotsu), Ann.Glob.Anal.G geom. 33 (2008), 245-252
80. Coarse classification of CMC-trinoids of genus g=0 and embedded ends, Oberwolfach Reports 24 (2007) 1365-1368

81. Associated families of immersions versus curved flats, Proceedings of the 8th International Workshop on Differential Geometry and its Applications p. 141-151, Cluj-Napoca 2007
82. Complex surfaces of constant mean curvature fibered by minimal surfaces, (with S.Kobayashi and F.Pedit), Hokkaido Math.J. 39 (2010), 1-55
83. CMC-trinoids with embedded ends: a closer look, (with Ph.Lang), in Geometry related to the theory of integrable systems, 99-119, RIMS Kokyuroku 1605, RIMS, Kyoto 2008,
84. Real Fuchsian Equations and Constant Mean Curvature Surfaces, (with J. Eschenburg), in matematica contemporanea 35 (2008) 1-26
85. Symmetric Pseudospherical Surfaces I: General Theory (with T.Ivey and I. Sterling), in Result.Math. 56 (2009), 3-21, In memory of Katsumi Nomizu,
86. Constant Mean Curvature Surfaces in Hyperbolic 3-Space via Loop Groups (with J.Inoguchi and S. Kobayashi) J. Reine Angew. Math. 686 (2014), 1-36
87. The tt^* Structure of the Quantum Cohomology of CP^1 from the Viewpoint of Differential Geometry (with M.Guest and W.Rossmann), archive 2009, Asian J.Math. 14 (2010) 417 - 438
88. Loop groups and surfaces with symmetries, in Proceedings of the 16th OCU International Academic Symposium 2008, OCAMI Studies 3 (2009) 29-39
89. The Björling problem for non-minimal constant mean curvature surfaces (with D.Brander), Comm. Anal.Geom. 18 (2010), 171-194
90. Conformal Asymptotics of Properly Embedded Annular CMC Ends, Pac. J.Appl. Math. 3 (2011) 1-10 , H.Wu Memorial Volume,
91. Triviality of the dressing isotropy for a Smyth type potential and nonclosing of the resulting CMC surfaces (joint with W. Rossmann), Exploratory Woekshop on Differential Geometry and its applications 2009, p.61-70 Cluj University Press 2011
92. On a relation between potentials for pluriharmonic maps and para-pluriharmonic maps (with N. Boumuki) Results in Mathematics 63 (2013) 335-376
93. On a relation between potentials for pluriharmonic maps and para-pluriharmonic maps (with N. Boumuki), Proceedings of the Fourteenth International Workshop on Diff.G geom. 14 (2010) 217-233
94. Darboux transforms and simple factor dressing of constant mean curvature surfaces (with F. Burstall, K.Leschke and A. Quintino) Manuscripta Math. 140 (2013) 213-236
95. Open Iwasawa cells and applications to surface theory, in: Variational Problems in Differential Geometry, London Math.Soc. LN 394, p. 56-67, Cambridge Univ. Press 2012
96. Willmore surfaces in spheres via the loop group method I: generic cases and some examples (joint with P. Wang), arXiv:1301.2756, submitted

97. Harmonic maps of finite uniton type into non-compact inner symmetric spaces (joint with P.Wang), arXiv:1305.2514, submitted
98. A loop group method for minimal surfaces in the three-dimensional Heisenberg group (joint with J.Inoguchi and S. Kobayashi), Asian J.Math. 20 (2016) 409 - 448
99. Pseudospherical surfaces of low degree of differentiability (joint with I.Sterling) Adv. Geom. 16 (2016), 1-20
100. Deformations of constant mean curvature surfaces preserving symmetries (joint with D.Brander), Ann.Sc.Norm.Super.Pisa Cl. Sci. (5) Vol. XIV (2015) 645-675
101. Minding's Theorem for low degrees of differentiability (joint with I.Sterling), Tokyo J.Math. 37 (2014) 503- 508
102. On symmetric Willmore surfaces in spheres I: the orientation preserving case (joint with Peng Wang), J.Differential Geom.Appl. 43 (2015), 102-129
103. On symmetric Willmore surfaces in spheres II: the orientation reversing case (joint with Peng Wang), arXiv:1407.4555, submitted
104. A loop group method for affine harmonic maps into Lie groups (joint with J.Inoguchi and S.Kobayashi) Adv. Math.298 (2016), 207-253
105. A new look at equivariant minimal Lagrangian surfaces in CP^2 , (joint with H.Ma), Geometry and Topology of Manifolds, 97-125 Springer Proc. Math. Stat. vol. 154, Springer 2016
106. On the Bernstein problem in the three-dimensional Heisenberg group (joint with J.Inoguchi and S.Kobayashi), Canadian Mathematics Bulletin 59 (2016), 50-61
107. Explicit expressions for the Iwasawa factors, the metric and the monodromy matrices for minimal Lagrangian surfaces in CP^2 (joint with Hui Ma), pp.19-47 Dynamical Systems, Number Theory and Applications, Festschrift in honor of A.Leutbecher, World Scientific 2016
108. New examples of minimal Lagrangian surfaces in CP^2 via loop groups (joint with Hui Ma), in preparation
109. Theta functions on tube domains (joint with S.Walcher), Abh. Math. Semin. Univ. Hambg. (2017)
110. Homogeneous Willmore surfaces in spheres (joint with Peng Wang), submitted